

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 13-22 and 27 are pending in this application. Claim 27 is added herein.

Withdrawn claims 1-12 and 23 are herein canceled without prejudice. Withdrawn claims 18, 19, and 23 and maintained as those should now be reinstated in view of the allowability of independent claim 13, from which claims 18, 19, and 23 depend, as discussed below. Claims 13-16, 20, and 21 were objected to for informalities. Claims 13-17 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. patent 5,895,939 to Ueno. Claims 20 and 21 were rejected under 35 U.S.C. § 103(a) as unpatentable over Ueno in view of U.S. Patent Application Publication 2002/0047125 to Fukuda et al. (herein “Fukuda”). The above-noted objection and rejections are traversed by the present response as now discussed.

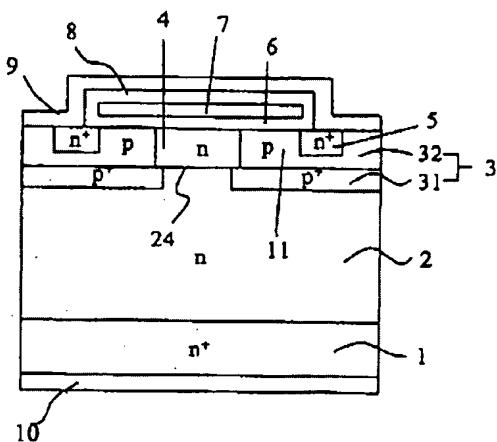
Addressing first the objection to claims 13-16, 20, and 21, the claims are amended as suggested in paragraph 1 of the Office Action to address those objections.

Addressing now the above-noted prior art rejections, the claims as written are believed to clearly distinguish over Ueno, and further in view of Fukuda.

Independent claim 13 is herein amended to clarify features recited therein, and particularly clarifies the high concentration gate region is selectively provided with a “depletion part”, in addition to other clarifications of the language in claim 13. Independent claim 13 additionally clarifies the low concentration gate region of the second conductivity type is “directly” deposited on the surface of the high concentration region of the second conductivity type.

Reprinted below is a comparison of Figure 4 in the present specification, which is believed to support the subject matter in the claims as currently written, and Figure 3A in Ueno cited against the claims. Applicants respectfully submit as discussed further below the

claims as written positively recite features neither taught nor suggested by Ueno, as will be clear from comparing applicants' Figure 4 with cited Figure 3A in Ueno.



This invention, FIG. 4

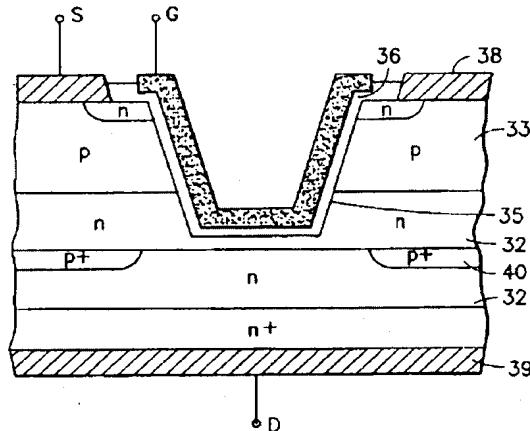


FIG. 3A

Cited reference, FIG. 3A

First, as noted above independent claim 13 recites "a low concentration gate region of the second conductivity type directly deposited on the surface of the high concentration gate region of the second conductivity type".

As shown in above Figure 4 in the present specification as a non-limiting example, a low concentration gate region 11 of the second conductivity type (p) is directly deposited on a surface of a high concentration gate region 31 of the second conductivity type (p).

In contrast to the claimed structure, Ueno includes an intervening low concentration base layer (top layer 32) formed on a surface of the high concentration gate region 40. Thereby, in Ueno the cited low concentration gate region 33 is *not* directly deposited on the cited high concentration gate region 40, but instead as shown above is deposited on an intermediate layer of the base region 32.

Applicants further note the claimed invention can cause an electron flow path to be formed by turning on a gate electrode 7 to start from a high concentration source region 5,

passed through a portion of a low concentration gate region 11 of the second conductivity type adjoining a gate insulation film 6, and then through a low concentration base region 4 of the first conductivity type, and enter a lower deposition film 2. As a result of the direct contact made by the low concentration gate region 11 of the second conductivity type with the surface of the high concentration gate region 31 of the second conductivity type, the low concentration base region 4 of the first conductivity type does not intervene between the high concentration gate region 31 and the low concentration gate region 11. That is, the low concentration gate region 11 and the low concentration base region 4 are placed horizontally side-by-side, with the result that electrons can flow along the surface in a horizontal direction from the low concentration gate region 11 to the low concentration base region 4.

In contrast to the above-noted operation possible in the claimed invention, in Ueno as shown in above Figure 3A as the low concentration base region 32 intervenes between the low concentration gate region 33 and the high concentration gate region 40, electrons must flow in a vertical direction from the low concentration gate region 33 to the low concentration base region 32. Since electrons in the low concentration gate region 33 flow in an interface formed with the gate insulation film 36, such a region is required to form a trench in a central part thereof for the purpose of forming a path for allowing the flow of electrons in the vertical direction.

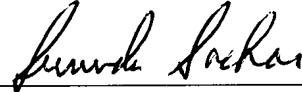
Thereby, Ueno suffers from a complication in a method of production of the device therein due to the formation of such an electron flow path. In contrast to Ueno the claimed invention can simplify the structure and process for securing an electron flow path with the low concentration gate region 11 of the second conductivity type contacting the surface of the high concentration gate region 31 of the second conductivity type.

In view of the foregoing comments applicants respectfully submit amended independent claim 13 as currently written, and thereby the claims dependent therefrom, recite a structure neither taught nor suggested by Ueno, and thus are allowable over Ueno.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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